OFFICE OF THE STATE FIRE MARSHAL

NOTICE OF ADOPTED AMENDMENT

TITLE 41: FIRE PROTECTION
CHAPTER I: OFFICE OF THE STATE FIRE MARSHAL

PART 170
STORAGE, TRANSPORTATION, SALE AND USE OF PETROLEUM AND OTHER REGULATED SUBSTANCES

SUBPART A: MISCELLANEOUS

Section

SUBPART C: UNDERGROUND STORAGE TANKS – FINANCIAL RESPONSIBILITY REQUIREMENTS

SUBPART D: UNDERGROUND STORAGE TANKS – ADMINISTRATIVE PROCEDURE RULES FOR ORDERS ISSUED BY THE DIVISION OF PETROLEUM AND CHEMICAL SAFETY

SUBPART E: LICENSING, CERTIFICATION AND IDENTIFICATION CARDS

OFFICE OF THE STATE FIRE MARSHAL

NOTICE OF ADOPTED AMENDMENT

170.1300	Possession of OSHA Identification Cards by Certified Individual Contractors and Certified Employees of Contractors
170.APPENDIX A	Checklist for Underground Storage Tank Installation (Repealed)
170.APPENDIX B	Checklist for Underground Storage Tank Reline (Repealed)
170.APPENDIX C	Checklist for Underground Storage Tank Removals (Repealed)
170.APPENDIX D	Checklist for Abandonment-in-Place of Underground Storage Tanks (Repealed)
170.APPENDIX E	Guidelines for Marinas
170.APPENDIX F	Required Job Schedule for Cathodic Protection Upgrade (Repealed)
170.APPENDIX G	Required Job Schedule for Underground Piping Upgrade (Repealed)
170.APPENDIX H	Required Job Schedule for Underground Storage Tank Installation (Repealed)
170.APPENDIX I	Required Checklist for Underground Storage Tank System Upgrade (Repealed)
170.TABLE A	Schedule for Phase-In of Release Detection
170.TABLE B	Manual Tank Gauging: Weekly and Monthly Standards

AUTHORITY: Implementing the Gasoline Storage Act [430 ILCS 15] and authorized by Section 2 of the Gasoline Storage Act [430 ILCS 15/2].

SOURCE: Rules and Regulations Relating to Service Stations filed July 10, 1958; amended March 6, 1963 and April 4, 1977; codified at 5 Ill. Reg. 10692; emergency amendment at 7 Ill. Reg. 1477, effective January 26, 1983, for a maximum of 150 days; emergency expired June 25, 1983; emergency amendment at 8 Ill. Reg. 10058, effective June 29, 1984, for a maximum of 150 days; emergency expired November 26, 1984; amended at 9 Ill. Reg. 9514, effective October 1, 1985; emergency amendment at 10 Ill. Reg. 345, effective January 1, 1986, for a maximum of 150 days; emergency expired June 1, 1986; emergency amendment at 10 Ill. Reg. 12324, effective July 2, 1986, for a maximum of 150 days; emergency expired November 29, 1986; amended at 10 Ill. Reg. 19976, effective January 5, 1987; amended at 12 Ill. Reg. 8023, effective April 26, 1988; emergency amendments at 13 Ill. Reg. 1886, effective January 27, 1989, for a maximum of 150 days; emergency expired June 26, 1989; amended at 13 Ill. Reg. 5669, effective April 21, 1989; amended at 13 Ill. Reg. 7744, effective May 9, 1989; amended at 13 Ill. Reg. 8515, effective May 23, 1989; amended at 13 Ill. Reg. 8875, effective May 24, 1989; amended at 13 Ill. Reg. 14992, effective September 11, 1989; amended at 14 Ill. Reg. 5781, effective April 10, 1990; amended at 15 Ill. Reg. 7042, effective April 29, 1991; amended at 16 Ill. Reg. 4845, effective March 12, 1992; emergency amendment at 17 Ill. Reg. 1186, effective January 12, 1993, for a maximum of 150 days; emergency expired June 11, 1993; amended at 19 Ill. Reg. 5467, effective April 1, 1995; amended at 20 Ill. Reg. 4698, effective March 11, 1996; amended at 21 Ill. Reg. 8945, effective July 15, 1997; amended at 22 Ill. Reg. 21339, effective

OFFICE OF THE STATE FIRE MARSHAL

NOTICE OF ADOPTED AMENDMENT

December 1, 1998; amended at 24 Ill. Reg. 12462, effective August 1, 2000; amended at 25 Ill. Reg. 9015, effective July 5, 2001; amended at 27 Ill. Reg. 8164, effective May 1, 2003; emergency amendment at 27 Ill. Reg. 8311, effective May 2, 2003, for a maximum of 150 days; emergency expired September 28, 2003; amended at 32 Ill. Reg. 1428, effective February 1, 2008; emergency amendment at 32 Ill. Reg. 15100, effective September 8, 2008, for a maximum of 150 days; emergency expired February 4, 2009; amended at 33 Ill. Reg. _____, effective _____.

SUBPART B: UNDERGROUND STORAGE TANKS – TECHNICAL REQUIREMENTS

Section 170.420 Design, Construction, Installation, Upgrade Procedures and Notification of UST Systems

a) Tanks. Any newly installed or replaced underground tank shall be of double-wall construction and equipped with interstitial monitoring that meets the applicable requirements of Section 170.530(g) and 40 CFR 280.43(g) for all permits issued February 1, 2008 and after.

b) Each tank shall be properly designed, constructed and installed, and any portion underground that routinely contains product shall be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory, as follows:

1) The tank is constructed of fiberglass-reinforced plastic. (The following industry codes, incorporated by reference in Section 170.410, may be used to comply with this subsection (b)(1): UL 1316; UL Canada Standard CAN4-S615; or ASTM D 4021-92.) To prevent penetration of the tank bottom, all non-metallic tanks shall be equipped with steel striker plates on the tank bottom immediately below any opening which might be used for taking dipstick measurements.

2) The tank is constructed of steel and cathodically protected (The following codes and standards, incorporated by reference in Section 170.410, may be used to comply with this subsection (b)(2): STI-P3; UL Canada Standard CAN4-S603, CAN4-S603.1 and CAN4-S631; NACE RPO285; or UL 58.) in the following manner:

A) Metallic tanks shall be thoroughly coated on the outside with suitable rust-resisting dielectric material.

B) All field-installed cathodic protection systems shall be designed by a corrosion expert.

C) New impressed current systems shall be designed to allow determination of the systems' operating status by means of permanently installed lights and gauges as required in Section 170.460. Existing impressed current systems must meet these requirements on or before November 1, 2003.

D) Cathodic protection systems are operated and maintained in accordance with Section 170.460.

3) Steel tanks shall be set on firm foundations and surrounded with at least 12 inches of non-corrosive inert material such as clean sand or gravel, well-tamped in place. The tank shall be placed in the hole with care, since dropping or rolling the tank into the hole can break a weld, puncture or damage the tank or scrape off the protective coating of coated tanks.

4) Steel tanks shall be covered with a minimum of three feet of earth. USTs existing on October 1, 1985 shall have been buried so that the tops of the tanks will not be less than two feet below the surface of the ground or shall be under at least 12 inches of earth and a slab of reinforced concrete not less than four inches in thickness; the slab shall be set on a firm, well-tamped earth foundation and shall extend at least one foot beyond the outline of the tank in all directions. When asphaltic or reinforced paving is used as part of the protection, it shall extend at least one foot horizontally beyond the outline of the tank in all directions.

5) Either:

A) The tank is constructed of a steel-fiberglass-reinforced plastic composite (The following industry codes, incorporated by reference in Section 170.410, may be used to comply with this subsection (b)(5): Act-100 or UL 1746.); or

B) The tank construction and corrosion protection are determined by the Office of the State Fire Marshal to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health or the environment than subsections (b)(1) and (2) of this Section.

Before the installation of any such tank, its construction and corrosion protection shall be submitted to the Office in writing and is subject to written approval by the Office.

6) Re-certified tanks may satisfy the requirements of subsections (b)(1) and (2) of this Section; however, written proof of such re-certification shall be submitted to the Office of the State Fire Marshal and STSS. Re-certified tanks must be reinstalled within 6 months after removal or re-certification, whichever is sooner. Re-certified tanks must have a warranty remaining for at least 5 years. Re-certifications must be conducted by a member of the Steel Tank Institute, Fiberglass Tank Institute, or the original tank manufacturer.

c) Spill and overfill prevention equipment.

1) To prevent spilling and overfilling associated with product transfer to the UST system, owners or operators shall use the following spill and overfill prevention equipment:

A) Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill pipe (e.g., a spill catch basin). New or replaced spill prevention equipment must have a minimum 5 gallon capacity and be maintained in a dry, clean state; and

B) Overfill prevention equipment that:

i) Automatically shuts off flow into the tank when the tank is no more than 95 percent full;

ii) Alerts the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank or triggering a high-level alarm; or

iii) Provides alternative methods that are no less restrictive than Subpart A or B and no less protective of human health or the environment, as approved in writing by the Office of the State Fire Marshal.

C) Float vent valves for overfill prevention shall not be allowed on

any type suction system.

2) Owners or operators are not required to use the spill and overfill prevention equipment specified in subsections (c)(1)(A) and (B), if:

A) Alternative equipment is used that is determined by the Office of the State Fire Marshal in writing to be no less protective of human health or the environment than the equipment specified in subsections (c)(1)(A) and (B).

B) The UST system is filled by transfers of no more than 25 gallons at one time, but shall have spill containment.

d) Installation tank, piping and upgrade procedures.

1) Excavation for USTs shall be made with due care to avoid undermining of foundations of existing structures. All USTs under buildings shall be located with respect to existing building foundations and supports so that the loads carried by the latter cannot be transmitted to the tank.

2) All tanks and piping shall be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions. (Tank and piping system installation practices and procedures described in the following codes, incorporated by reference in Section 170.410, may be used to comply with this subsection (d)(2): API Recommended Practice 1615; PEI Publication RP100; or ANSI B31.3 and B31.4.)

3) Metallic tanks shall not be surrounded or covered by cinders or other material of corrosive effect. Corrosion protection shall be provided in accordance with Section 2-3.3 of NFPA 30, incorporated by reference in Section 170.410, where soil resistivity is 10,000 ohm-centimeters or less. Such corrosion protection shall be in accordance with API 1615, incorporated by reference in Section 170.410.

4) Secure proper permitting and job schedules for installation, piping or upgrades and obtain a stamped acknowledgement from the OSFM.

5) Conduct on-site inspection to ensure accuracy of approved site plans, drawings and actual equipment being installed.

6) Provide equipment with sufficient lifting capacity to unload and place USTs into the tank excavation. Tanks shall not be rolled, dropped or dragged.

7) Upon delivery at the installation site, tanks and piping shall be inspected to detect any evidence of damage to coatings or structure.

8) Upon discovery of any damage to tanks or piping, repairs shall be in accordance with manufacturer's instructions or supervision.

9) Prepare excavations to ensure safe movement of equipment and materials. Excavations shall provide adequate space for the installation of tanks, piping and ancillary equipment. Special attention shall be given to sloping, benching, stepping or shoring the sides of the excavation to make it stable.

10) Conduct Date and Time Certain inspection by OSFM personnel for testing USTs before installation, as per manufacturer's recommended procedures.

11) To prevent flotation of USTs as a result of high water table or flooding, approved anchorage methods or ballasting shall be installed.

12) Pipe trenches shall meet manufacturer's specifications and API 1615 Section 10.3.1 for depth, width, slope, spacing and placement of pipe within.

13) Pipe installation shall meet manufacturer's specifications and API 1615, Sections 9.3 and 9.4. Joint adhesive and thread sealant shall meet manufacturer's requirements for petroleum products, including ethanol or methanol blended gasoline.

14) OSFM personnel may conduct Date and Time Certain air test of pipe installation and examine any corrosion protection before backfilling of pipe trenches.

15) Wiring of electric pumps and all electrical equipment in connection therewith shall conform to NFPA 70.

16) After all work has been completed and the system has been put into service, OSFM personnel may conduct a Date and Time Certain final inspection. This inspection will be conducted on the UST installation, leak detection equipment, spill and overfill equipment and the electrical system. The completed Notification of Underground Storage Tanks form will be ready to present to the OSFM STSS during the final inspection.

17) Contractors shall complete the manufacturer's installation checklist for USTs and piping and submit it to the manufacturer or owner as applicable. The contractor shall maintain a copy of the checklist.

18) There shall be a minimum of two manufactured slotted or perforated observation wells of at least 4" diameter installed in each new tank field of tanks larger than 1,000 gallons and one well for 1,000 gallon tanks or less and shall have two wells for fields with more than one tank. They shall be placed at opposite ends or opposite corners 1 foot below the invert elevation of lowest UST. Lids shall be securely protected against unauthorized activities. Only one well will be required if groundwater flow direction can be proven and such proof is supplied at the time of permitting and the well is then installed in the downstream location.

19) Containments – submersible and dispensers.

A) A tank containment sump must be installed at the tank on all new tanks with submersible pumps or American suction piping systems. European suction systems are not required to have this containment.

B) Under-dispenser containment must be installed on all new dispenser installations where there previously was no dispenser.

C) When an existing dispenser is removed and replaced with another dispenser and equipment used to connect the dispenser to the UST is replaced, under-dispenser containment is required. This equipment may include flex connectors or risers or other transitional components that are beneath the dispenser and connect the dispenser to the piping. ~~European suction systems are not required to have containment.~~

D) If more than 20' or 50% of a pipe run is replaced, the containments required in subsections (d)(19)(A) and (B) are required.

E) If an OSFM STSS observes water in a sump and it is in contact with bare metal piping including flex connectors, then corrosion protection must be installed on the metal piping in accordance with Section 170.460 or the sump shall be replaced. In the event the sump is not replaced, the water shall be removed and the sump shall be made water-tight.

F) A hydrostatic test will be performed on all containment installations as follows (hydrostatic testing does not apply to piping):

i) All penetrations must be completed prior to testing, including electrical.

ii) Containment is to be filled with water to a height that covers the highest penetration by 2".

iii) Containment is not to be backfilled (backfilling is allowed for support of containment sump, but not to be installed around the sides of the sump) prior to test.

iv) Test duration is 30 min. and performed under PAI Time and Date Certain requirements with no drop in water level.

20) All repairs, installations, upgrades and maintenance of UST systems shall be done in accordance with manufacturer's recommended procedures.

21) Any installation work performed in or around the excavation area must stop at sunset unless adequate lighting is provided.

e) Certification of installation.

1) Contractors shall certify on the UST notification form that:

A) The installer has been certified or licensed by the Office of the State Fire Marshal.

B) The installation has been approved by the Office of the State Fire Marshal.

C) All work listed in the manufacturer's installation checklist has been completed, if applicable.

D) All applicable Office of the State Fire Marshal installation requirements, as contained in this Part, have been completed. Upgrades~~Upgrade~~ are to follow the appropriate Section of the installation guidelines.

E) Contractors shall certify on the UST notification form in accordance with Section 170.440(f) that the installer has been certified by the tank and piping manufacturers, if applicable.

(Source: Amended at 33 Ill. Reg. _____, effective _____)